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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,157

12/23/2005

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EXAMINER

TESKIN, FRED M

ART UNIT

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1796

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DELIVERY MODE

10/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/562,157	Applicant(s) SUZUKI ET AL.	
	Examiner Fred M. Teskin	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 13-18 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 13-17 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Detailed Action

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 24 September 2008 has been entered. The submission presents amendments to claims 8 and 17 and cancels claims 9-12. Accordingly, claims 1-8 and 13-18 remain pending and under examination.

The amendments made to claim 8 have resulting in withdrawal of the following rejections: (I) claims 8, 17 and 18 under 35 U.S.C. 103(a) as being unpatentable over Jang *et al*; and (II) claims 8, 11, 17 and 18 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The disclosure is objected to because of the following informalities: (I) in paragraph [0064], "bispentamethylene" should apparently read --bispentamethyl-- (see page 21, lines 4 and 6); and (II) in paragraph [0065], "...borasne" is misspelled (see page 21, penultimate line). Appropriate correction of the specification is required.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 8 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4429089 (Pedretti *et al*).

Pedretti *et al* disclose the polymerization of 1,3-butadiene at a temperature lower than 25°C (*viz.*, 20°C), in the presence of a catalyst system prepared by described procedure A, see Examples 18, 19, and 23. Per procedure A, the catalyst system was prepared by adding solvent, a component (A) (organic metallic compound of aluminum), diolefine, lanthanide complex (C) and Lewis acid (B) to a bottle, which was then placed to carry out polymerization in a rotary bath (col. 5, line 45 to col. 6, line 5). This procedure illustrates preparation of the catalyst system in the presence of the monomer to be polymerized as discussed at column 4, lines 27-30 of Pedretti *et al*. As butadiene polymerization was conducted subsequent to this preparation procedure, the catalyst system used in said examples is considered to meet the “previously prepared” limitation of claim 8. Further, the components A, C and B in said examples correspond to applicants’ components (B), (A) and (C) as defined in claim 8, which is readable on a method wherein the 1,3-butadiene being polymerized originates from the conjugated diene monomer present in the previously prepared catalyst system. As to claim 17, the specific lanthanide complex used as component C in the cited examples [Nd(O-n-C₁₀H₂₁)₃] is an alkoxide of neodymium, and as such, qualifies as “a salt of neodymium soluble in a hydrocarbon solvent” as claimed. As such, Pedretti *et al* is deemed fully responsive to the limitations of claims 8 and 17.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pedretti *et al.*

Pedretti *et al.*, as noted above, describes a method of producing butadiene-based polymer by polymerizing 1,3-butadiene under the claimed temperature condition and using the requisite catalyst components (A), (B) and (C) along with diolefin, in a previous prepared catalyst system. Further, in Examples 18, 19 and 23, the obtained products is characterized by infrared analysis as having a 1,4-cis content 98.0, 98.3 and 98.9%; and in both Examples numbered 39 and Example 40, the obtained products are characterized by 1,4-cis content and vinyl bond content not less than 98.0 % and not more than 0.3 %, respectively; *viz.*, 1,4-cis: 98.7% and 1,2: 0.2 % (the “1,2” notation presumably referring to vinyl content). Pedretti *et al* do not state that FT-IR was used to measure the polymer microstructure and do not report an M_w/M_n ratio for the described products. Nevertheless, since the exemplified products were prepared at the same polymerization temperature and with the same catalyst components as applicants’ butadiene-based polymer and since the dependence of molecular weight distribution on polymerization conditions and catalyst system is well known in the polymer art, a plausible basis exists for inferring that those products inherently possess the same microstructure (cis-1,4 and vinyl bond contents) and molecular weight parameters of applicants’ polymer as claimed.

Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness is established. *In re Best*, 195 USPQ 430,

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433 (CCPA 1977). When there is sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not. *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pedretti *et al* as applied to claims 1-7 above, in view of US 6046266 (Sandstrom *et al*).

It would have been obvious to one of ordinary skill in the art to include the butadiene polymer product of Pedretti *et al* in the rubber composition of a tire element, as claimed, since Pedretti *et al* positively teach utility of cis-1,4-polybutadiene in pneumatic tire applications (see col. 3, lines 18-27) and since the benefits of including cis-1,4-polybutadiene rubber in tire tread and sidewall compounds are well-recognized in the prior art as evidenced by Sandstrom *et al* (see, e.g., col. 1, lines 45-50; col. 3, lines 6-8; col. 4, lines 36-42 and col. 16, lines 41-45). The expectation of realizing equivalent performance as tire elements would have provided the requisite motivation for an ordinarily skilled practitioner to utilize such polymer products of Pedretti *et al* as described in any of Examples 18, 29, 23 and 39-40 thereof in creating the rubber composition and tire components of Sandstrom *et al*, and thereby arrive at the invention of instant claims 13-16.

Applicants' arguments filed 24 September 2008 have been fully considered but they are not persuasive.

Applicants again argue that in the synthesis conditions of Pedretti *et al*, the cis content is less than 98% as calculated by the equation (IV) according to the present invention, but proffer no objective evidence in support of the assertion nor specifically identify any evidence already of record establishing such to be the case. This argument, therefore, is deemed insufficient to rebut the *prima facie* case of unpatentability based on correspondence in polymerization conditions between Pedretti *et al* and the applicants' synthesis method, which justifies an inference of inherency of the undisclosed properties of the applicants' claimed polymer in the products of the cited embodiments of the prior art. Thus, as in *Best, supra*, the burden shifted to applicants to show that the undisclosed cis content parameter does not inhere in the products of the prior art process, but no probative showing was proffered to rebut the *prima facie* case. Accordingly, the continued rejection is still deemed to be tenable and therefore is maintained as stated above.

Claim 18 is objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim. Use of the particular rare earth element containing compound recited in this claim in a method of producing a butadiene-based polymer according to claim 17 is not disclosed nor adequately suggested in the available prior art.

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In view of the application of Pedretti *et al* to claims 8 and 17, which were not so rejected in the previous Office action, this action is made non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Fred M Teskin/

Primary Examiner, Art Unit 1796

FMTeskin/09-26-08

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